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Results of the September 25th, 2006 samplings of the First-Stubble (third sampling) and Plant-Cane (first sampling) Sugarcane Maturity Tests at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm at Schriever, LA are attached. The study is designed to examine the natural ripening process and compare the results for the same harvest dates over a 5-yr period (2002 – 2006); consequently, a glyphosate-containing ripener is not applied. Samples consist of 15, hand-cut stalks of clean, trash-free and properly topped cane from each of four replications. **When mechanically harvested, one can expect TRS/TC levels to be 10 to 20% lower as a result of additional trash in the cane.** The first-stubble study includes eight released Louisiana varieties: LCP 85-384, HoCP 85-845, HoCP 91-555, Ho 95-988, HoCP 96-540, L 97-128, L 99-226, and L 99-233 and one Florida variety, CP 89-2143. The plant-cane study contains these varieties as well as HoCP 00-950 which is a candidate for release in 2007. The variety CP 70-321 is no longer included in the maturity studies because of declining acreage.

First Stubble. Stalk weights and heights, as an average of the four varieties planted in this test since 2002, are higher than in any of the previous years including 2002. During the two-week sampling interval, stalk heights increased by 10 inches and stalk weights by 0.2 lbs./stalk. Stalk densities, first taken in 2005, are also greater for all varieties in 2006 suggesting that the stalk weights can be attributed to increases in both stalk length/height and density. Some of the greatest increases in density are with LCP 85-384 and HoCP 96-540.

Brix, Sucrose and Purity percentages as well are TRS/TC levels, as an average of the four varieties planted since 2002, continue to be lower than in previous years for this sampling date. On average, TRS/TC levels increased by 33 lbs. with HoCP 85-845 having the greatest (45 lbs./TC) and HoCP 96-540 and L 99-233 the smallest increases. As expected, L 99-128 has the highest sugar yield, but the yield is significantly lower than for this sampling date in 2003 and 2004. The Florida variety, CP 89-2143, produced the shortest (85 inches), but one of the heaviest stalks (2.4 lbs./stalk), and sugar yields that were comparable to HoCP 91-555, Ho 95-988, and HoCP 96-540. Of the two newly released varieties, L99-226 produced a higher sugar yield (200 lbs/TC) than L 99-233 (168 lbs./TC). At the time of harvest, all varieties were lodged with L 99-233 showing the greatest degree of lodging.

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Plant Cane. Like the first-stubble, stalk weights and heights, as an average of the five varieties that are included in the plant-cane maturity test since 2002, are greater than in previous years. The only exception is LCP 85-384 whose stalk weight and height in 2006 are both similar to those recorded in 2002. Of the varieties L 97-128, L 99-226, and L 99-233 had the tallest stalks. L 99-233 produces a small barreled stalk and this was evident in its stalk weight and diameter which were both similar to LCP 95-384. We did not report stalk densities in 2005 for the plant cane, but stalk densities for plant-cane were lower than the densities in the first stubble. The Florida variety, CP 89-2143, produces a shorter stalk, however, it is a big barrel stalk and this is reflected in its stalk weight. The experimental variety, HoCP 00-950, is a characteristically short-stature variety. Its height is three inches shorter the LCP 85-384 and ten inches shorter than HoCP 96-540 and L 97-128. The shorter height is also reflected in the stalk weight and density of this variety. Lodging was also a problem in the plant-cane maturity study with L 99-233 exhibiting the greatest amount of lodging.

Unlike the first-stubble test, sugar levels, as an average of the five varieties planted since 2002, are higher in 2006 (212 lbs./TC) than they were in 2002 and 2003. Of the commercially released varieties, L 97-128 and L 99-233 had the highest TRS/TC levels and HoCP 96-540 had the lowest. The Florida variety, CP 89-2143, produced a sugar yield (197 lbs./TC) that is considered intermediate for the varieties included in this test. Early sugar continues to be one of the prime considerations for the release of HoCP 00-950. The presence of this early sugar is demonstrated in this sampling of the maturity study as HoCP 00-950 produced sugar yields that were 23 lbs./TC higher than the current early sugar standard, L 97-128.

The fourth sampling of the maturity test (first-stubble only) is scheduled for October 10th. Hopefully, weather conditions will continue to be favorable for the natural ripening process and improve TRS/TC levels in response to the application of glyphosate ripeners as well.

Reminder. If you would like to discontinue your receipt of these reports in 2006 or if you know of individuals who would like to begin receiving this information in 2006, please contact Mrs. Sandy Roberts by email (sroberts@srrc.ars.usda.gov). Emailing insures address accuracy.

Maturity study reports are prepared by Dr. Ed Richard of the USDA-ARS Sugarcane Research Unit.

Good luck with your 2006 Harvest Season!!

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit, Houma, LA, September 25, 2006[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm3)	Bx. (%)	Su. (%)	Pu. (%)	TRS (lb.)	TRS (lb.)	(lb.)
LCP 85-384	2006	1.9	96	0.79	1.18	13.99	10.72	76.59	189.5	156.2	33.3
	2005	1.4	74	0.77	0.99	14.63	10.97	74.92	191.6	156.5	35.1
	2004	1.5	91	---	---	14.54	11.12	76.44	196.3	190.6	5.7
	2003	1.6	81	---	---	14.76	11.58	78.40	207.3	186.4	20.9
	2002	1.7	89	---	---	13.97	10.80	77.30	191.9	159.6	32.3
HoCP 85-845	2006	2.4	97	0.92	1.09	14.90	11.93	80.08	215.9	171.3	44.6
	2005	1.7	79	0.83	1.02	15.05	11.77	78.22	210.5	183.2	27.3
	2004	1.8	83	---	---	14.96	11.97	80.00	216.4	206.1	10.3
	2003	1.6	73	---	---	15.76	12.34	78.38	220.6	203.5	17.1
	2002	1.9	80	---	---	14.28	11.46	80.28	207.5	161.0	46.5
CP 89-2143	2006	2.4	85	0.96	1.05	13.50	10.24	75.85	176.6	144.89	31.7
	2005	---	---	---	---	---	---	---	---	---	---
	2004	---	---	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---	---	---
HoCP 91-555	2006	1.6	88	0.79	1.08	14.52	10.41	71.67	175.5	142.8	32.7
	2005	1.5	84	0.78	1.03	15.74	11.66	74.04	200.3	160.8	39.5
	2004	1.6	90	---	---	14.96	11.15	74.52	192.5	175.2	17.2
	2003	1.5	77	---	---	15.63	12.43	79.58	221.9	196.8	25.1
	2002	1.6	83	---	---	14.37	10.60	73.73	181.7	148.2	33.5
Ho 95-988	2006	2.2	91	0.88	1.08	13.86	10.08	72.71	173.2	140.5	32.7
	2005	1.8	80	0.86	0.96	14.81	10.95	73.91	189.9	153.7	36.2
	2004	---	---	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---	---	---
HoCP 96-540	2006	2.3	95	0.83	1.21	13.55	9.94	73.34	173.5	151.3	22.2
	2005	1.8	81	0.84	1.02	14.56	10.90	74.82	192.1	163.7	28.4
	2004	1.9	89	---	---	14.76	11.37	77.00	203.5	191.9	11.7
	2003	1.8	79	---	---	14.76	11.42	77.28	205.0	178.6	26.4
	2002	2.1	87	---	---	14.50	11.22	77.35	195.4	147.8	47.6
L 97-128	2006	2.2	103	0.83	1.12	15.27	11.91	77.97	214.7	180.6	34.1
	2005	1.9	91	0.84	0.97	15.80	12.13	76.75	216.7	193.9	22.8
	2004	2.1	97	---	---	16.34	13.21	80.83	242.4	228.0	14.4
	2003	1.8	82	---	---	16.45	13.23	80.41	242.1	225.2	16.9
	2002	---	---	---	---	---	---	---	---	---	---
L 99-226	2006	2.6	99	0.93	1.09	14.61	11.19	76.60	199.7	170.6	29.1
	2005	2.0	80	0.91	0.93	14.83	11.13	75.00	196.4	172.7	23.7
	2004	---	---	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---	---	---
(Cont'd.)	2002	---	---	---	---	---	---	---	---	---	---
L 99-233	2006	1.7	104	0.78	1.01	13.44	9.78	72.79	168.2	148.9	19.3
	2005	1.4	87	0.75	0.95	15.96	12.26	76.84	217.2	181.5	35.7
	2004	1.6	100	---	---	14.52	11.21	77.10	198.9	197.4	1.5
	2003	---	---	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---	---	---
Averages[5]	2006	2.0	94	0.83	1.14	14.2	10.8	75.4	188.6	155.4	33.2
	2005	1.6	83	0.81	1.00	15.19	11.51	75.77	202.6	171.2	31.5

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield	Previous sample date[4]	TRS change from previous sample
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS	TRS	
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)	(lb.)	(lb.)
	2004	1.8	92	---	---	14.89	11.55	77.47	205.9	194.2	11.7
	2003	1.7	78	---	---	15.28	12.00	78.47	215.3	193.5	21.8
	2002	1.9	85	---	---	14.19	10.89	76.73	191.6	151.4	40.2

[1] Data for each parameter represents the average of four replications of 15 stalks each.

[2] Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 15-stalk sample of each rep.

[3] Brix factor = .8854; Sucrose factor = .8105.

[4] Previous sample date was September 11, 2006.

[5] Averages are based only on varieties included in previous year's first-stubble maturity study (LCP 85-384, HoCP 85-845, HoCP 91-555, and HoCP 96-540).

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRC, Sugarcane Research Unit,Houma, LA, September 25, 2006[1].

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)
LCP 85-384	2006	2.0	92	0.82	1.06	14.94	11.78	78.85	211.4
	2005	---[4]	---	---	---	---	---	---	---
	2004	1.8	85	---	---	14.92	11.57	77.50	205.8
	2003	1.6	80	---	---	13.57	10.25	75.44	179.8
	2002	2.0	94	---	---	13.15	9.64	73.25	166.5
HoCP 85-845	2006	2.4	97	0.95	1.01	15.21	12.19	80.13	220.4
	2005	---	---	---	---	---	---	---	---
	2004	2.1	87	---	---	15.16	12.19	80.38	220.8
	2003	1.7	78	---	---	13.30	10.18	76.46	179.8
	2002	2.0	82	---	---	13.37	10.24	76.53	180.9
CP 89-2143	2006	2.5	86	1.02	1.00	14.32	11.27	78.58	196.9
	2005	---	---	---	---	---	---	---	---
	2004	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---
HoCP 91-555	2006	2.1	99	0.87	0.99	16.14	12.59	77.98	222.4
	2005	---	---	---	---	---	---	---	---
	2004	1.7	84	---	---	15.78	12.23	77.41	215.3
	2003	1.8	84	---	---	14.81	11.25	75.94	196.0
	2002	1.8	87	---	---	13.95	9.88	70.79	165.6
Ho 95-988	2006	2.4	95	0.92	1.04	15.56	12.10	77.76	215.8
	2005	---	---	---	---	---	---	---	---
	2004	2.2	88	---	---	14.70	11.09	75.39	194.3
	2003	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---
HoCP 96-540	2006	2.5	99	0.91	1.10	14.01	10.36	73.95	181.5
	2005	---	---	---	---	---	---	---	---
	2004	2.2	91	---	---	14.65	11.19	76.36	199.4
	2003	1.8	81	---	---	13.70	10.21	74.46	179.6
	2002	2.2	90	---	---	13.28	9.61	72.30	161.5
L 97-128	2006	2.6	100	0.90	1.09	16.09	12.74	79.17	229.1
	2005	---	---	---	---	---	---	---	---
	2004	2.2	96	---	---	16.96	13.82	81.48	254.5
	2003	1.9	88	---	---	14.85	11.26	75.77	199.8
	2002	2.4	95	---	---	14.54	11.01	75.62	197.2
L 99-226	2006	2.9	102	0.95	1.13	15.47	11.89	76.77	212.6
	2005	---	---	---	---	---	---	---	---
	2004	2.6	96	---	---	15.23	12.02	78.90	217.8
	2003	---	---	---	---	---	---	---	---
(Cont'd.)	2002	---	---	---	---	---	---	---	---

Variety	Year	Stalk[2]				Normal juice[3]			Sugar yield
		Wt.	Lh.	Dia.	Density	Bx.	Su.	Pu.	TRS
		(lb.)	(in.)	(in.)	(g/cm3)	(%)	(%)	(%)	(lb.)
L 99-233	2006	2.0	104	0.81	1.05	16.36	12.88	78.72	228.8
	2005	---	---	---	---	---	---	---	---
	2004	1.6	97	---	---	15.12	11.75	77.63	209.4
	2003	1.8	95	---	---	13.39	9.78	73.02	168.4
	2002	---	---	---	---	---	---	---	---
HoCP 00-950	2006	2.1	89	0.90	1.02	16.80	13.60	80.96	252.2
	2005	---	---	---	---	---	---	---	---
	2004	---	---	---	---	---	---	---	---
	2003	---	---	---	---	---	---	---	---
	2002	---	---	---	---	---	---	---	---
Averages[5]	2006	2.4	96.7	0.90	1.06	15.2	11.8	78.0	211.6
	2005	---	---	---	---	---	---	---	---
	2004	2.0	90.7	---	---	15.3	12.0	78.1	214.7
	2003	1.5	72.1	---	---	11.9	9.0	64.4	157.6
	2002	2.1	89.7	---	---	13.7	10.1	73.7	174.3

[1] Data for each parameter represents the average of four replications of 15 stalks each.

[2] Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 15-stalk sample of each rep.

[3] Brix factor = .8854; Sucrose factor = .8105.

[4] No data due to hurricane Rita.

[5] Averages are based only on varieties included in previous year's plant-cane maturity study (LCP 85-384, HoCP 85-845, HoCP 91-555, HoCP 96-540, and L 97-128).